



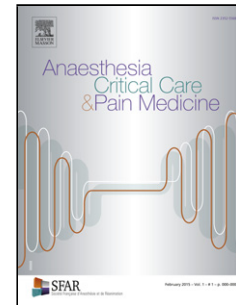
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## The Australian Response to the COVID-19 Pandemic:

### A co-ordinated and effective strategy

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The World Health Organization reported the identification of a pneumonia caused by a novel coronavirus (severe acute respiratory syndrome coronavirus 2 [SARS-CoV-2]) in late December 2019 in Wuhan, China (1). On the 25<sup>th</sup> of January 2020, the World Health Organisation (WHO) reported 1,320 confirmed cases of COVID-19 globally with the first four cases recorded in Australia on the 25<sup>th</sup> of January 2020 (2). Simultaneously, Australia was facing significant other national challenges including catastrophic fires, drought and as well as some areas of the country being inundated by flooding. Located between the Indian and the South Pacific Oceans and with an area > 50% larger than Europe, and a current population of 25.6 million people, Australia has one of the lowest population densities in the world at 3.3 people per square kilometre. Nearly 90% of the country population live in urban areas primarily concentrated along the eastern seaboard, with two thirds living in one of the state capital cities (3). Australia has a well-developed market-based economy with a strong history of sustained and stable growth. The current GDP per capita is USD 51,701, making Australia one of the wealthiest countries in the world today. In this setting, Australia enjoys a high standard of health care. In 2017–2018, 9.3% of GDP (total of AUD 185.4 billion) was spent on health care, which is comparable to New Zealand, Brazil, Portugal, and Finland, but less than Switzerland (12.2%) and the United States (16.9%) (4). The Australian health system is delivered through multiple layers of government and the private sector. The federal government funds primary care and aged care services delivered by independent providers, whilst the state government runs publicly funded hospitals. Importantly, state governments have constitutional responsibility for public health matters in Australia. The Australian Government has a Chief Medical Officer who chairs the Australian Health Principal Protection Committee (AHPPC), the key technical advisory group for public health matters and comprising all state Chief Health Officers along with representatives from Defence, Foreign Affairs and Emergency Management (5).

As the number of COVID-19 cases rapidly escalated in China and with subsequent significant global spread recognised, the World Health Organization declared on the 30<sup>th</sup> of January 2020 that the outbreak was a public health emergency of international concern (6, 7). The respiratory disease complex was officially renamed coronavirus disease 2019 (COVID-19) on

the 11<sup>th</sup> of February 2020. The Australian response was swift and coordinated, with the Prime Minister of Australia announcing the activation of the Australian Health Sector Emergency Response Plan for Novel Coronavirus (COVID-19) on the 27<sup>th</sup> of February 2020. Australia was also fortunate in that the commencement of the pandemic coincided with summer months (8). The World Health Organization initial public health emergency of international concern declaration was upgraded to pandemic status on the 11<sup>th</sup> of March 2020.

Australia has experienced lower infection and death rates than many comparable Organisation for Economic Co-operation and Development (OECD) countries, with just 28,794 confirmed cases and 909 deaths as of the 31<sup>st</sup> of January 2021 (9). A principal feature of Australia's response has been a broadly unified national response led by the AHPPC, whilst acknowledging the need the states to retain some autonomy. Australia's success in containing the pandemic may partially be attributed to her geographical advantage as an island nation, which makes it more practical to control borders. However the response has also been characterised by rapid, effective actions, policies, and leadership practices implemented through strong collaboration between the public and private sectors (10).

The Australian Commonwealth and State Government's health responses to the COVID-19 outbreak were clear and targeted the following objectives (Table I):

**Table 1:** Australia's Health Response Objectives for COVID-19

1. **Minimise the number of people becoming infected with COVID-19**
2. **Minimise the severity and the mortality rate in those individuals infected**
3. **Minimise the demand on our health systems**
4. **Maximise the health care capacity**
5. **Maximise the knowledge and understand the efficacious therapies available to treat COVID-19 disease**

**6. Aggressively support scientific research to work towards a vaccine****7. Ensure COVID-19 vaccines when developed, are available to Australians for free.**

One of the initial concerns addressed by both the Commonwealth and State Governments, based on the international experience, was the potential for health resources to be overwhelmed, particularly of concern was the Australian critical care capability. An early government initiative was to establish a National Cabinet, an agile, peak decision-making body headed by the Prime Minister and comprising of all state leaders. This administrative structure had not been invoked since World War II. The AHPPC became the key advisory body to the National Cabinet, substantially removing bureaucratic layers and enabling rapid decision-making at a national scale.

The National Cabinet adopted a strategy of “aggressive suppression”, which accepted that imported cases may arise despite quarantine but facilitated policies that would rapidly control any transmission within the community. This meant strong border control measures, both national and international, with mandatory 14 days quarantine in accommodation facilities, a rapidly scaled up PCR-based mass testing program and enhanced contact tracing resources within public health units. The Australian community was responsive to regulatory measures including social distancing and mask wearing, with the nation largely escaping the unrest and dissent of other Western nations. Regulations were strongly enforced with significant judicial penalties imposed for breach of regulations. The Australian Defence Force established a dedicated COVID-19 Joint Task Force to assist, when directed by the federal government.

A key feature of the response was the successful contact tracing system. Acknowledging that most nations worldwide were facing extensive community transmission by March 2020 that exceeded contact tracing capability, the Australian health system was able to respond to recurrent incursions of COVID-19 through extensive testing in affected communities combined with rapid contact tracing and isolation of contacts in their own homes. The largest outbreak, in the state of Victoria, gave rise to 20,484 cases and necessitated a lengthy “lockdown” to bring the epidemic under control, suggesting that even with significant resources devoted to a “test, trace, isolate” strategy, only modest numbers of

COVID-19 in a community would exceed contact tracing capability and require lockdown-style measures to curb transmission.

By the end of March 2020, all non-essential businesses and activities had been closed and Australians were only permitted to leave home to undertake defined essential duties: seek health care, perform exercise or obtain vital provisions. Recognising the significant economic impact of such measures the government introduced substantial financial support to business and industry. The restrictions also included the suspension of many non-urgent health services or the requirement to operate in a modified fashion. The major health system adjustments included nationwide suspension of non-urgent surgery, government funding of Telehealth services, and the guarantee if required of private hospital bed capacity through an agreement between the federal government and private hospital providers. (Table 1 describes the measures instituted to minimise infection transmission).

**Table 2:** National Measures to minimise the Spread of Infection within Australia during the COVID-19 pandemic

Date	Action
29 <sup>th</sup> of January 2020	14-day self-isolation for travellers arriving from Hubei Province of China
1 <sup>st</sup> of February 2020	Travel bans on mainland China; 14-day self-isolation for travellers arriving from mainland China
1 <sup>st</sup> of March 2020	Travel ban on Iran; 14-day self-isolation for travellers arriving from Iran
5 <sup>th</sup> of March 2020	Travel ban on Republic of Korea; 14-day self-isolation for travellers arriving from Republic of Korea
11 <sup>th</sup> of March 2020	Travel ban on Italy; 14-day self-isolation for travellers arriving from Italy
15 <sup>th</sup> of March 2020	Universal precautionary 14-day self-isolation requirement on all international arrivals Arrival ban on cruise ships from foreign ports for 30 days
18 <sup>th</sup> of March 2020	Limit of fewer than 100 people for non-essential indoor gatherings Limit of fewer than 500 people for outdoor gatherings Restrictions on visitors and state aged care facilities Overseas travel restrictions for Australians

<b>20<sup>th</sup> of March 2020</b>	Border closure to all non-citizens and non-residents; 14-day self-isolation for all travellers
<b>23<sup>rd</sup> of March 2020</b>	Closure of social gathering venues including pubs, clubs, hotels, gyms, indoor sporting venues, hotels, cinemas, entertainment venues, casinos, night clubs and places of worship  Restrictions on funerals (adhere to 1 person per square meter rule) and restaurants and cafes (takeaway and/or home delivery only).
<b>25<sup>th</sup> of March 2020</b>	Enhancement on social distancing measures by prohibition of additional activities and venues  Postponement of all non-urgent elective surgery in public health systems
<b>28<sup>th</sup> of March 2020</b>	14-day self-isolation for all travellers at specified facilities
<b>1<sup>st</sup> of April 2020</b>	Postponement of all non-urgent elective surgery in private hospitals

Early experience in severely affected countries suggested that between 5 and 16% of laboratory-confirmed COVID-19 patients would require admission to an Intensive Care Unit (ICU) (11-13). In Australia, public health measures targeting a reduction in virus transmission have been the primary means to reduce the overall disease burden and requirement for critical care services. Early in the pandemic, however, it was recognised that expanding ICU capacity might be an important strategy. In March 2021, the Australian and New Zealand Intensive Care Society (ANZICS) undertook a study to describe reported intensive care bed and invasive ventilation surge capacity in Australia. There are 191 ICUs in Australia with 2378 available intensive care beds during baseline activity, equating to 9.4 ICU beds per 100,000 population. This study reported capacity to increase intensive care bed capacity by 4258 beds, a 191% increase over baseline capacity of 2228 ICU beds, with 4815 machines identified at these sites capable of delivering invasive mechanical ventilation (14). Ventilator procurement, repurposing and production was immediately commenced to accommodate the potential deficit and training strategies developed to increase the critical care workforce.

Australia is a world-leader in the development of living guidelines, through the work of the Australian Living Evidence Consortium and in partnership with the Cochrane Collaboration. Early in the pandemic, the Commonwealth Government commissioned a taskforce to bring together the peak health professional bodies across Australia providing care to patients with COVID-19 (15). This task group undertake continuous evidence surveillance to identify and rapidly synthesise emerging research in order to provide national, evidence-based guidelines for the clinical care of people with COVID-19. The guidelines address the full spectrum of COVID-19 disease across mild, moderate, severe, and critical illness and have been well received.

At the time of going to publication, most domestic restrictions have eased in Australia (with some exceptions and variation between states and territories), but with the global pandemic still active, stringent international regulation and mandatory quarantine remain in place. The Australian vaccination programme rolls out has commenced, with the intention of offering all Australians free vaccination by October 2021. The initial strategy is to vaccinate the institutionalised elderly, frontline quarantine, and healthcare providers. There are positive signals as to the likely success of the 2021 vaccine program and it is anticipated our border restrictions will be gradually lifted as we learn to live with a new and persistent infectious disease threat.

Australians have a great deal for which to be grateful, including our geographical isolation, effective and timely Commonwealth and State government intervention and a motivated and educated population. The first verse of our national anthem has never had more veracity:

*"Australians all let us rejoice,  
For we are one and free;  
We've golden soil and wealth for toil,  
Our home is girt by sea;  
Our land abounds in nature's gifts,  
Of beauty rich and rare;  
In history's page let every stage,  
Advance Australia Fair!"*

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